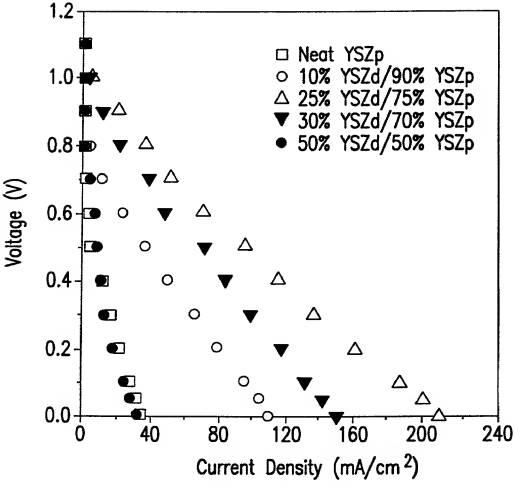


YSZd = dense YSZ
YSZp = porous YSZ
□ ,Pmax = 5.1 mW/cm^2
○ ,Pmax = 19.4 mW/cm^2
△ ,Pmax = 34.4 mW/cm^2
▼ ,Pmax = 4.0 mW/cm^2
● ,Pmax = 46.6 mW/cm^2

FIG.1

FIG.2A

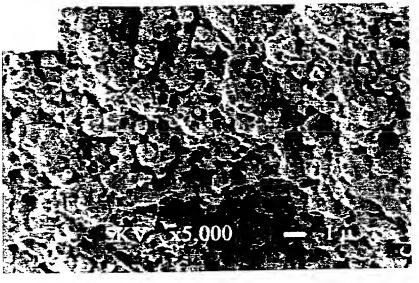


FIG.2B

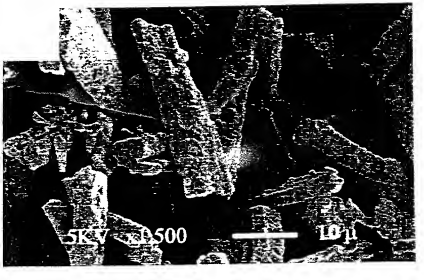
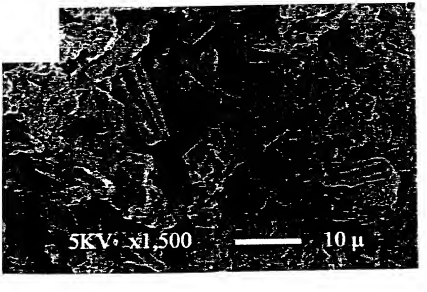


FIG.2C



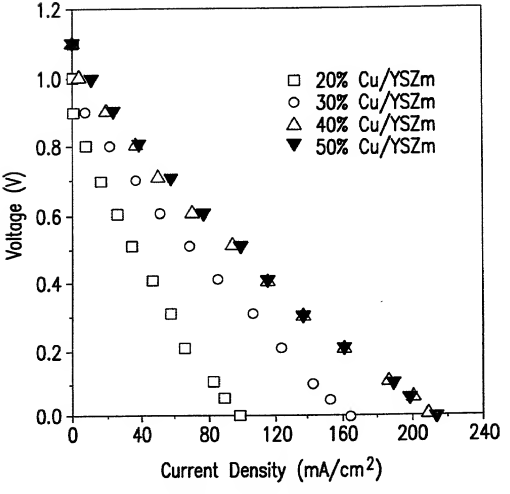
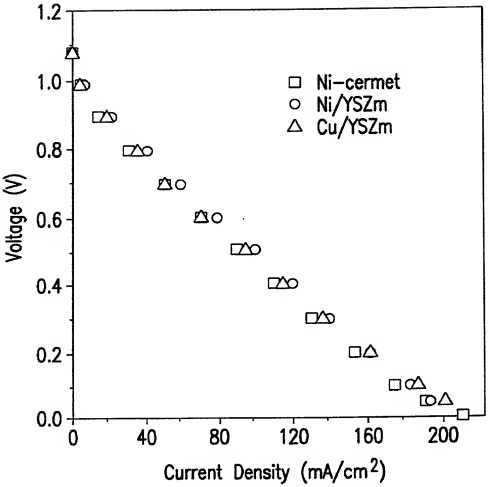

1.2
1.0
0.8
0.6
0.4
0.2
0.0
Voltage (V)
0
40
80
120
160
200
240
Current Density (mA/cm2)
□ 20% Cu/YSZm
○ 30% Cu/YSZm
△ 40% Cu/YSZm
▼ 50% Cu/YSZm
□,Pmax = 18.6 mW/cm2
○,Pmax = 34.2 mW/cm2
△,Pmax = 46.6 mW/cm2
▼,Pmax = 48.6 mW/cm2

FIG.3



□,Pmax = 45.1 mW/cm^2
○,Pmax = 49.0 mW/cm^2
△,Pmax = 46.6 mW/cm^2

FIG.4

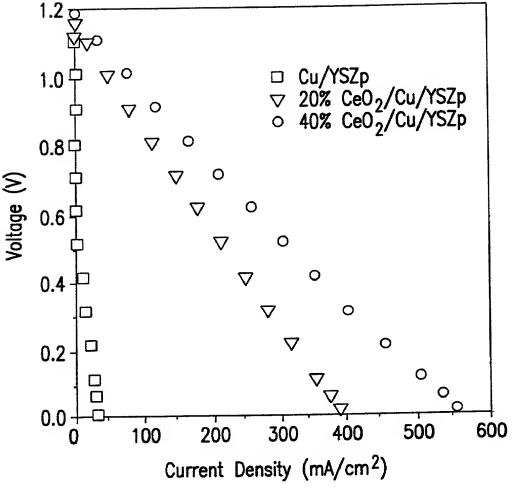
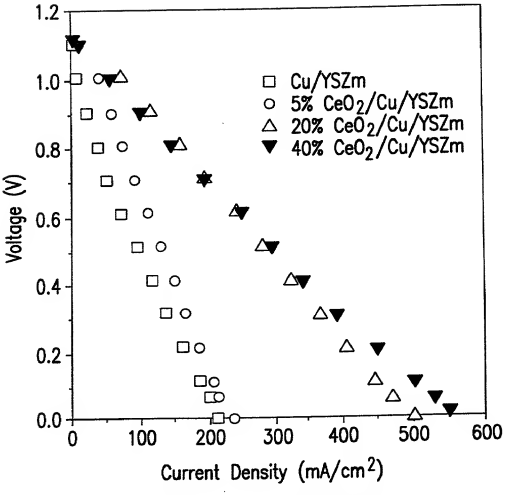
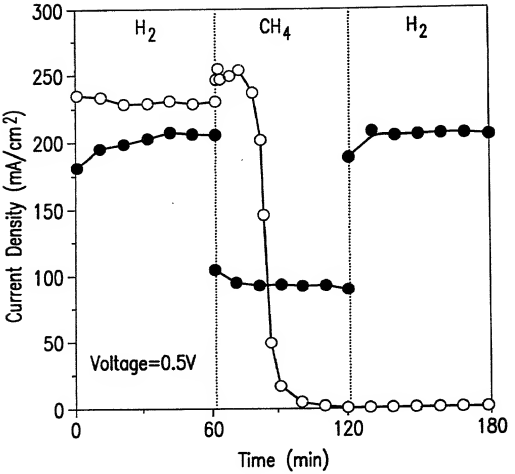

1.2
1.0
0.8
0.6
0.4
0.2
0.0
Voltage (V)
0
100
200
300
400
500
600
Current Density (mA/cm2)
□ Cu/YSZp
▽ 20% CeO2/Cu/YSZp
○ 40% CeO2/Cu/YSZp
□,Pmax = 5.1 mW/cm2
○,Pmax = 104.9 mW/cm2
△,Pmax = 151.2 mW/cm2

FIG.5



□ ,Pmax = 46.6 mW/cm^2
○ ,Pmax = 64.3 mW/cm^2
△ ,Pmax = 142.1 mW/cm^2
▼ ,Pmax = 146.4 mW/cm^2

FIG.6



● – $Cu/CeO_2/YSZ$
○ – $Ni/CeO_2/YSZ$

Temperature = 800°F

FIG.7

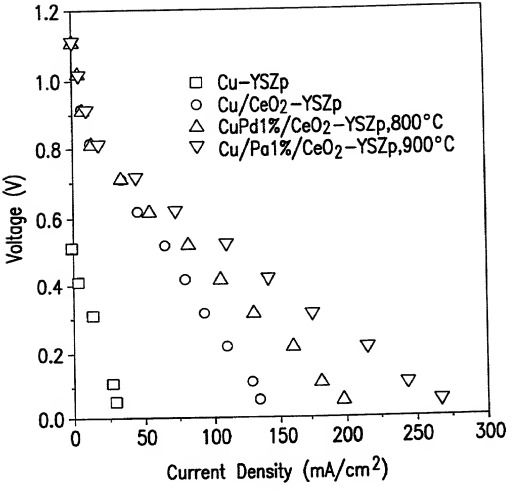

1.2
1.0
0.8
0.6
0.4
0.2
0.0
Voltage (V)
0
50
100
150
200
250
300
Current Density (mA/cm2)
Cu-YSZp
Cu/CeO2-YSZp
CuPd1%/CeO2-YSZp,800°C
Cu/Pa1%/CeO2-YSZp,900°C

FIG.8